Each of these rejections is traversed.

Status of Amendments

The listing of the claims which appears in the Amendment filed April 12, 2005 provides an accurate listing of claims 1-15 and 25-27.

Summary of the Invention

The present invention is directed to a flame retardant molding composition that is free of halogen and antimony. The composition includes an epoxy resin and two flame retardant components namely (1) melamine cyanurate and (2) a transition metal oxide containing an oxyanion of a Group VIA element. All of the independent claims require the presence of at least an epoxy resin, melamine cyanurate and a transition metal oxide containing an oxyanion of a Group VIA element.

Suitable epoxy resins include epoxy cresol novolac resin, biphenyl epoxy resin and others listed in the present application. The resin may be cured with a hardener (curing agent) such as phenolic novolac hardeners, anhydride hardeners and others described in the specification. The compositions of the present invention may include conventional additives such as fillers (e.g., silica), colorants, mold release agents, coupling agents, catalysts, ion scavengers, metal oxides, metal hydroxides, pigments, adhesion promoters, toughening agents, UV absorbers and antioxidants.

The relative amounts of the components of the molding composition may vary, such as 4-12 wt.% resin, 0.1-3.5 wt.% melamine cyanurate, 0.1-2 wt.% WO_3, 0.001-10 wt.% hardener, and 10-85 wt.% filler.

The presence of additives and the relative amounts of the components are not required in all claims. As recited in claim 1, the most basic embodiment of the present invention is a molding composition containing at least an epoxy resin and two flame retardants (melamine cyanurate and a Group VIA transition metal oxide).

Issues Presented

The issues include:

I.   Are claims 1, 2, 4, 15, 25 and 26 rendered obvious by U.S. Patent No. 6,660,811 to Ogura et al.?

II.   Are claims 3 and 7 rendered obvious by the Ogura patent in view of U.S. Patent No. 5,476,716 to Gallo et al.?